

Supporting Lifelong Competence Development

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In this keynote

- Very short introduction TENCompetence
- How do we create a new generation of learning environments supporting:
 - Lifelong learning
 - Informal learning & Formal learning
 - Personal Competence Development (employability)
 - Open educational resources
 - New forms of assessment (eg. of Prior Learning)
 - Automation (formal models needed)
- Challenge for you: find the underlying critique on the way we are currently organising learning in schools and society
- Aim is to stimulate discussion during the conference



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The TENCompetence Project

- IST/TEL Integrated Project Dec. 2005 – Dec. 2009
- Aim: The development of an open source infrastructure for lifelong competence development
- 15 core partners and a network of associated partners (among which JISC/CETIS and SURF)
- 4 major experimental areas:
 1. Digital Cinema
 2. Health Care
 3. UNESCO-IHE Water Management (Nile Region)
 4. Lifelong Learning City (Antwerp)
- Additional pilots from associated partners

Future learning environments

- Flexible and Open Distance Education can be defined as “teaching & learning using technology”
- Question:
What technologies do you currently use to support your distance teaching?
- Question:
What technologies do learners use to support their (informal and formal) learning?
- What will future learning environments look like?



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Our focus:

- Perspective is the individual (personal learning/ personal competence development) not the institute
- Take the whole spectrum of learning into account: formal, informal and non-formal learning
- Integration of Learning, Working, Living
- Focus on competence development & competence assessment + employability: matching of competences, finding new suitable jobs, etc.
- Focus on learning networks (communities)
- Focus on guidance and support in learning
- Use of new technologies to support this process



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The challenge

In our (future) society: individuals are (will be) permanently triggered to further develop their abilities:

- Worldwide competitive economy places new demands on individual workers and organisations: new activities, new technologies, new markets, changing jobs, etc.
- Social and personal triggers to develop new competences related to personal growth, family, leisure time, etc.

Question: How can we support individuals in lifelong competence development, using new technologies?



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Core questions most people encounter in various phases during life

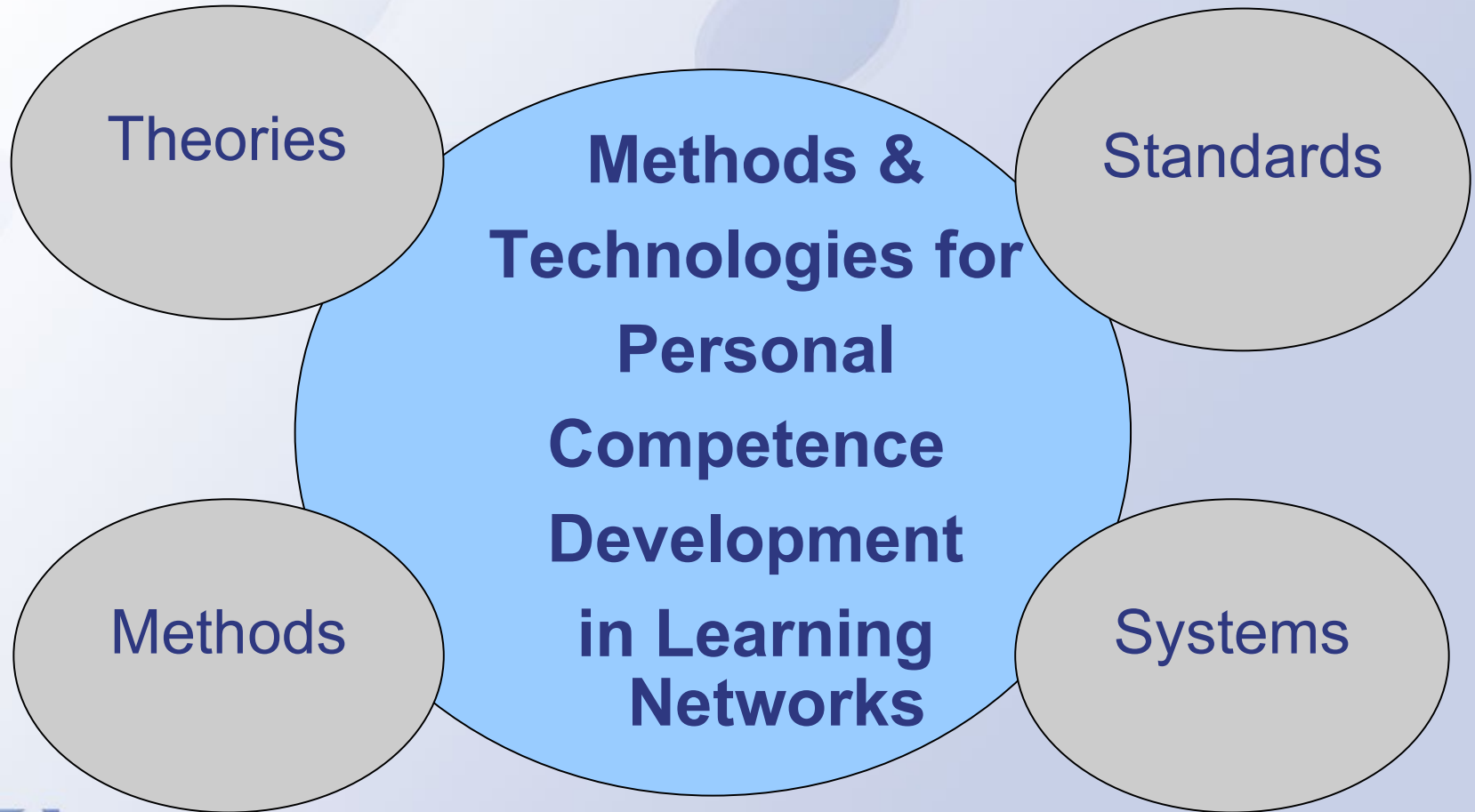
- I want to (further) develop a specific competence
- I want to study for a new job or function
- I want to keep my competence profiles up-to-date
- I want to map my competences on various job profiles to see which ones are within reach (related to employability: searching for new job opportunities)



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The solution we are developing...



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A faint, light blue network diagram is visible in the upper left corner of the slide. It consists of several interconnected oval nodes of varying shades of blue, connected by thin lines, suggesting a complex web or network structure.

What does this mean?



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Some
Formalisation

Assume:

A Learning Network

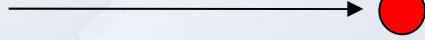
(e.g. a network of professionals aimed at the exchange of knowledge and competence development in the field)



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Also assume a “competence” as a node in the network

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Each competence has one or more “assessments” connected to it

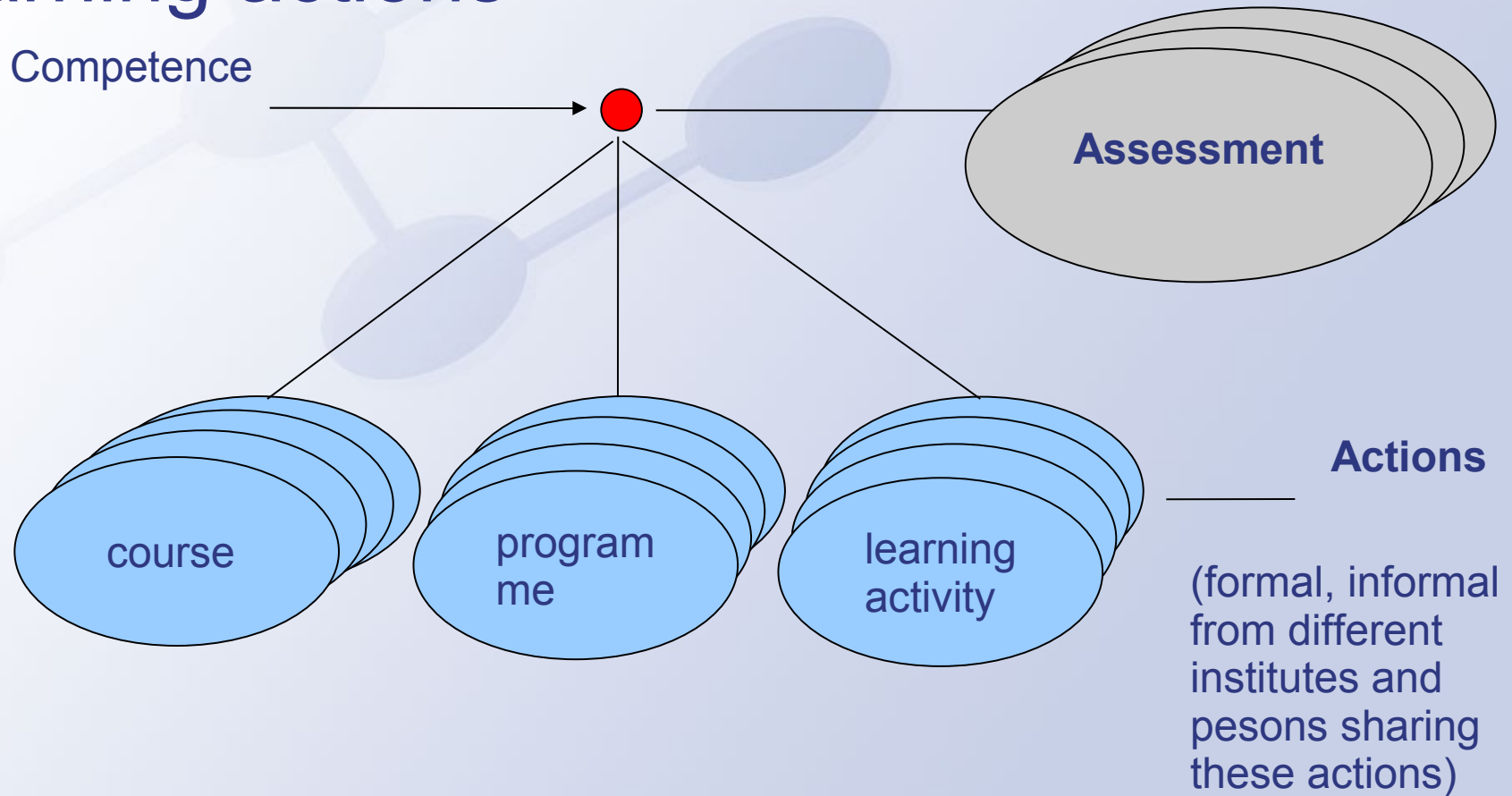
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Assessment



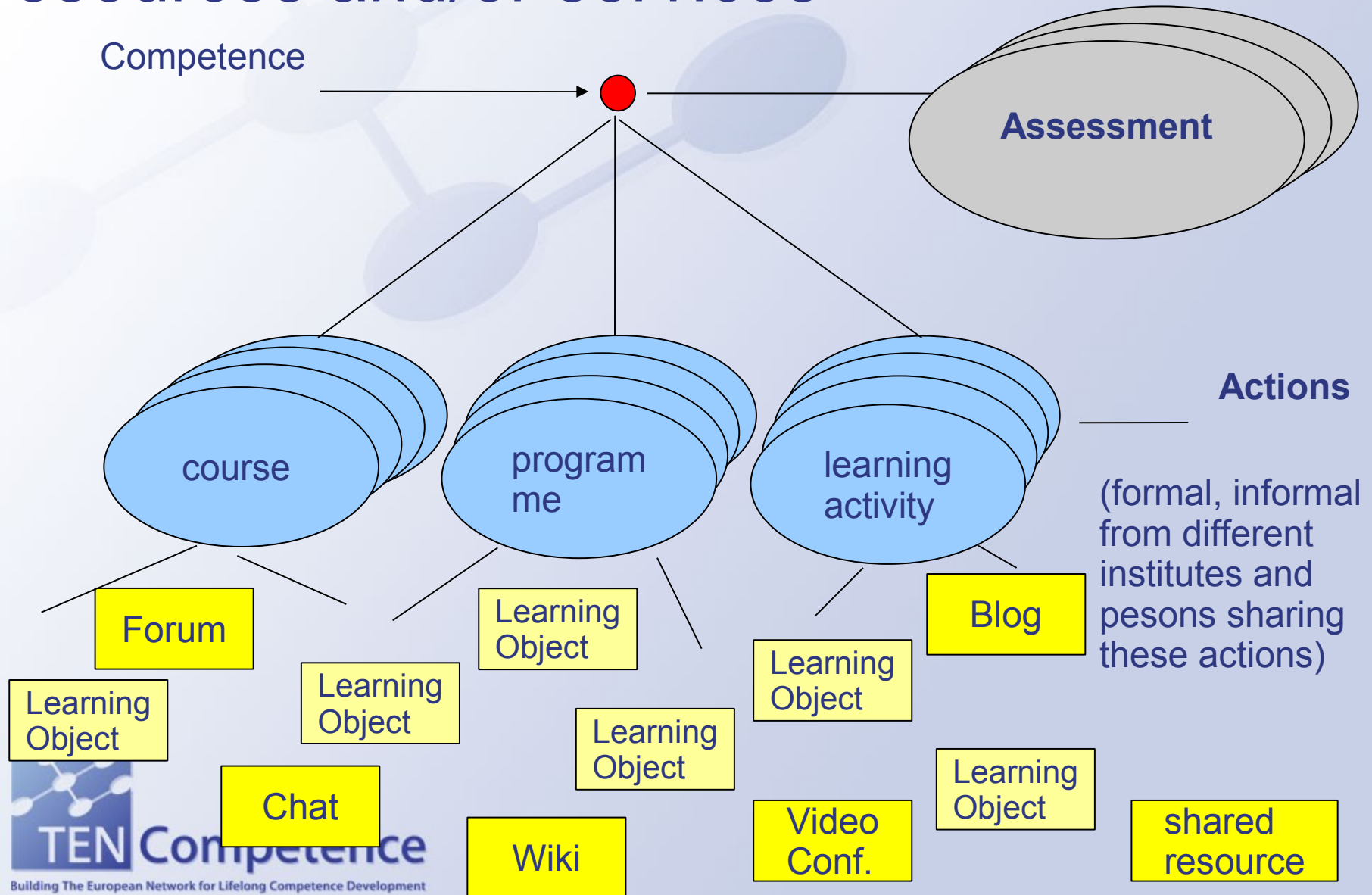
Each competence is connected to N “learning actions”



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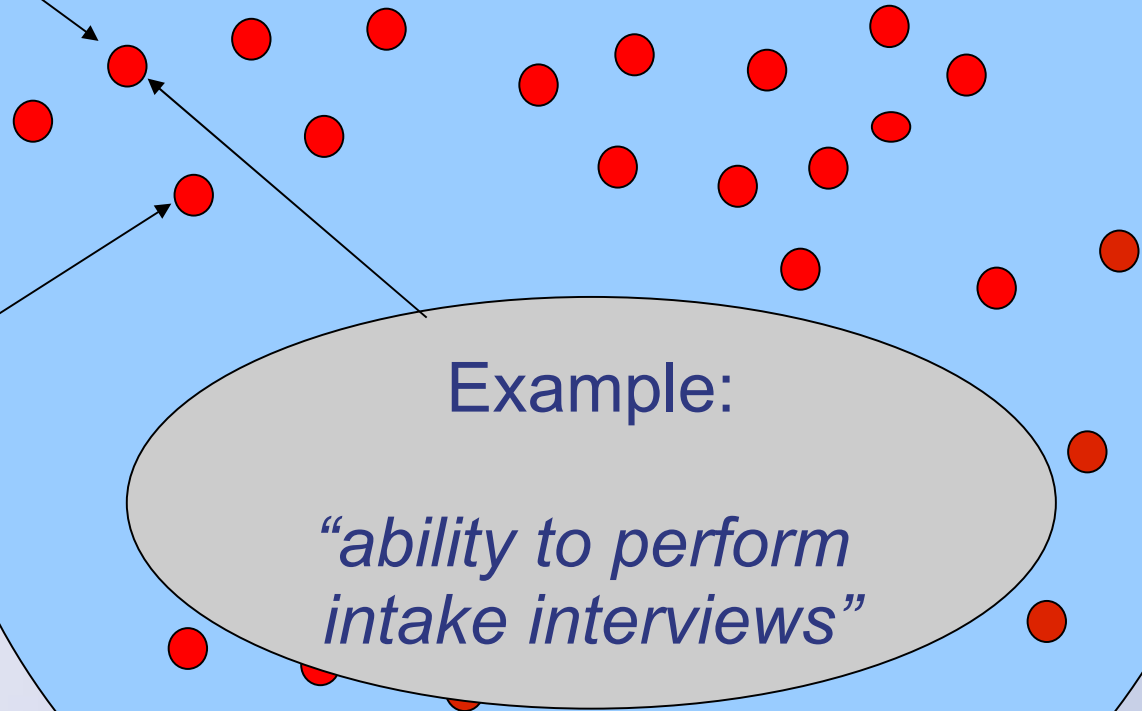
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Each action is connected to N learning resources and/or services



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Learning Network X



Example:

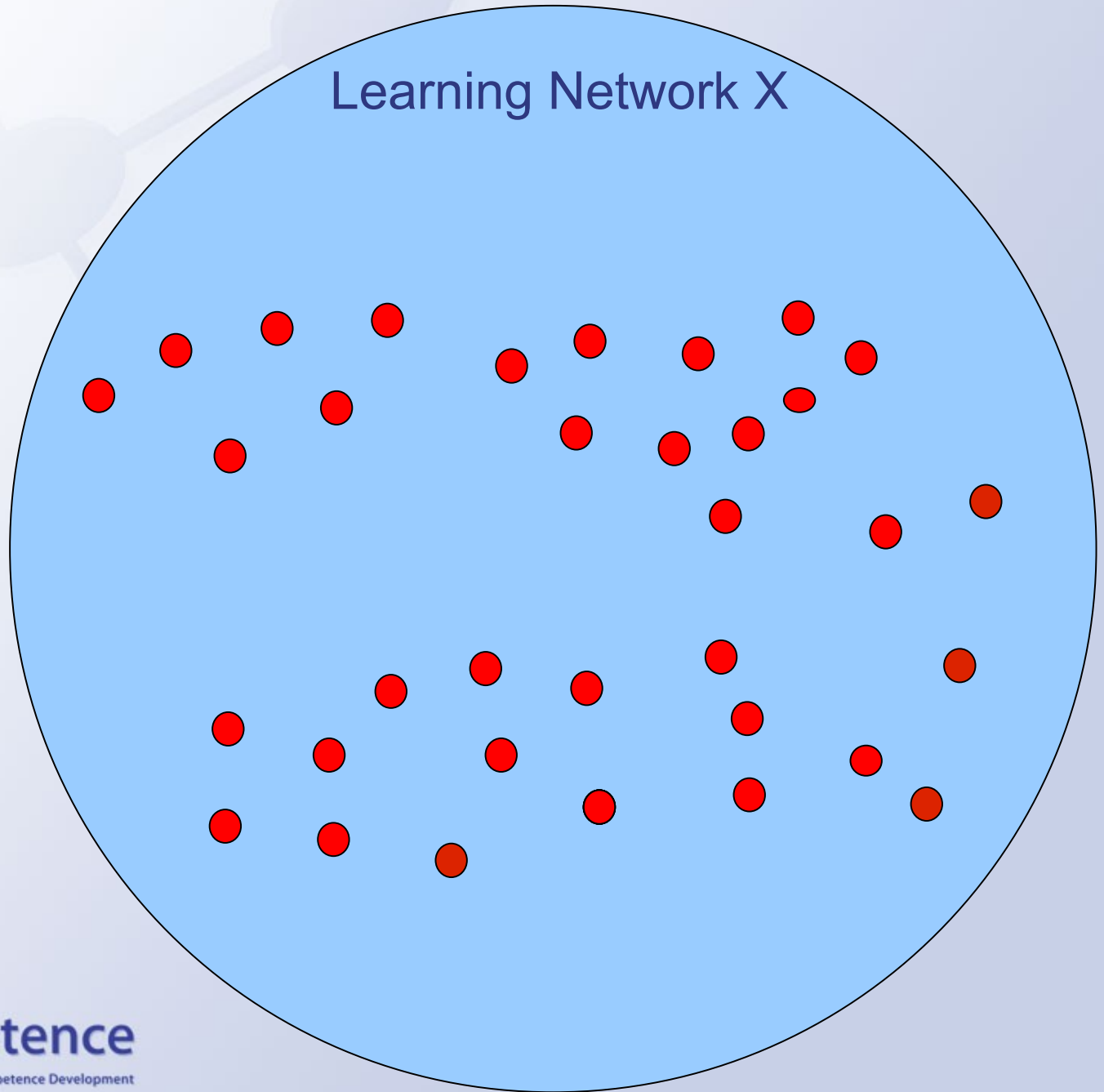
*"ability to perform
intake interviews"*



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Learning Network X

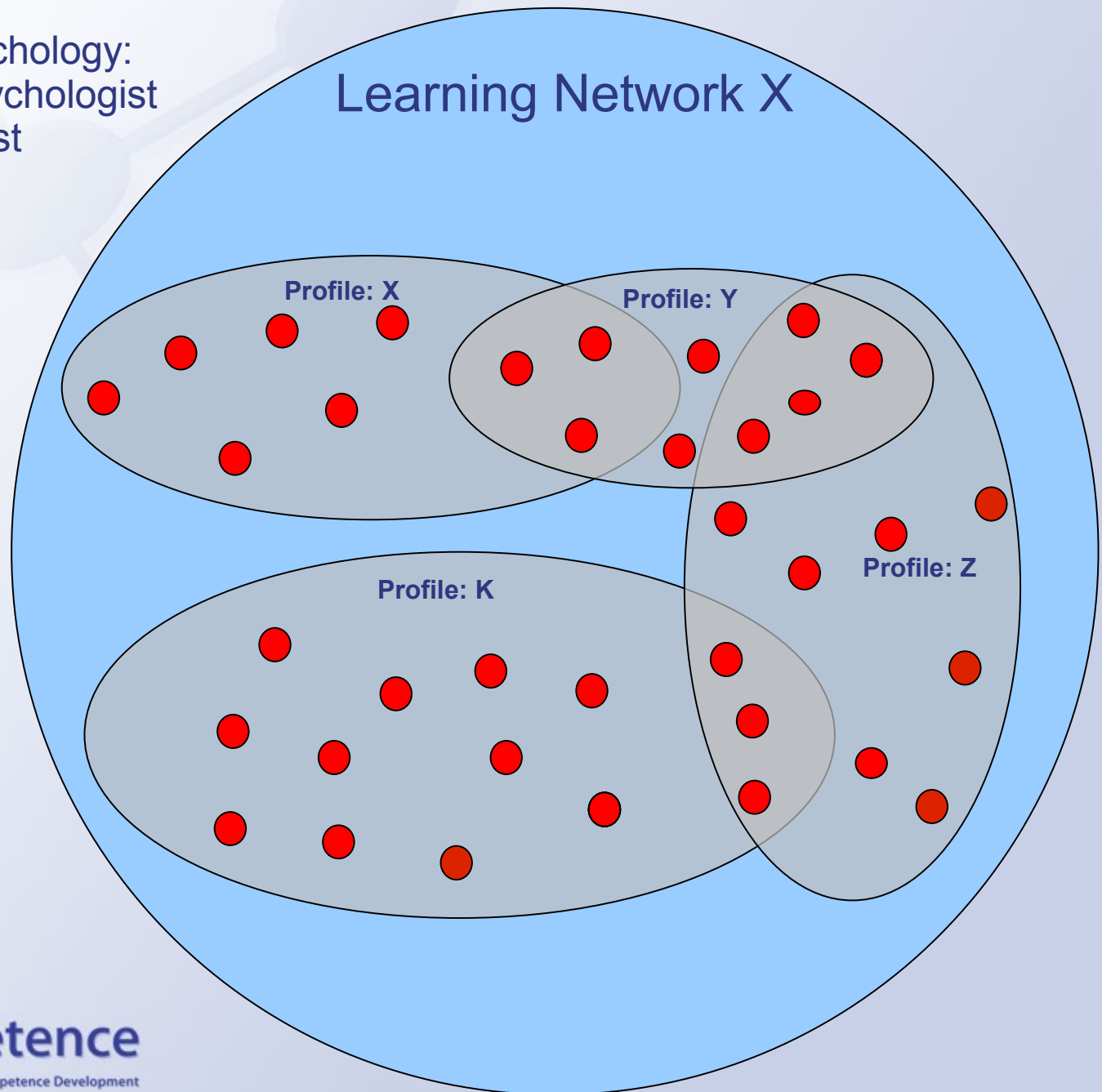


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Examples in Psychology:

- Educational Psychologist
- Gestalt Therapist
- Researcher
- ...



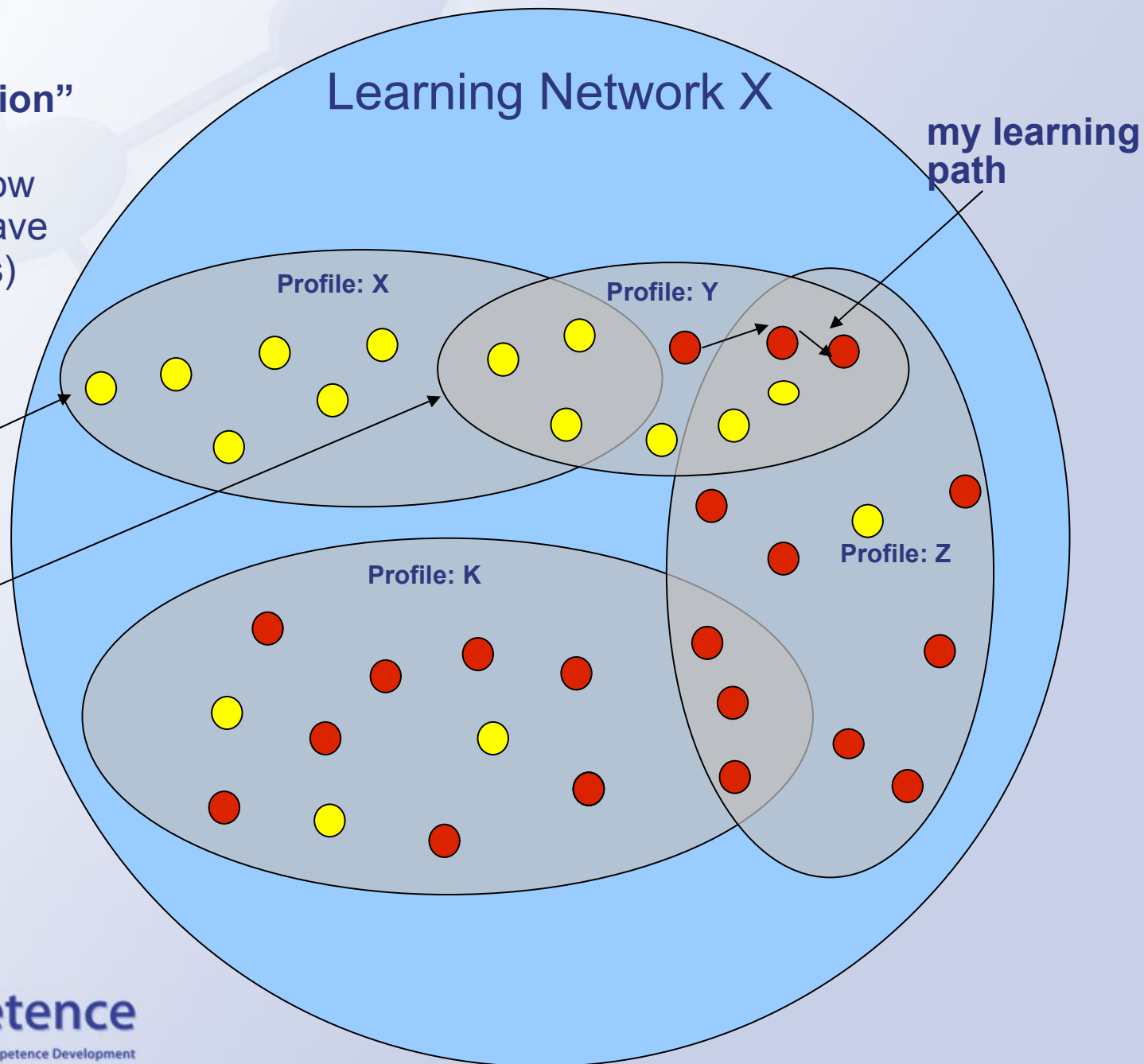
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My personal “position”
in the competence
map (I have the yellow
competences and have
to learn the red ones)

My current job

My Goal:
Learning for a
new job



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Research Issues in a Learning Network

- What is a competence (in an formal sense)?
- How
- How Of course we already do many of these things, but most of it is hindered by the
- How tremendous implementation
- How and operational issues and costs involved.
- How
- How **What we are doing is search for automation!**
- How
- ...



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Some answers....



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Definition of Competence

- A *competence* is the **estimated ability** of an actor to deal with **critical events, problems or tasks** that can occur in a certain situation (at work, at home, on the road, etc.)

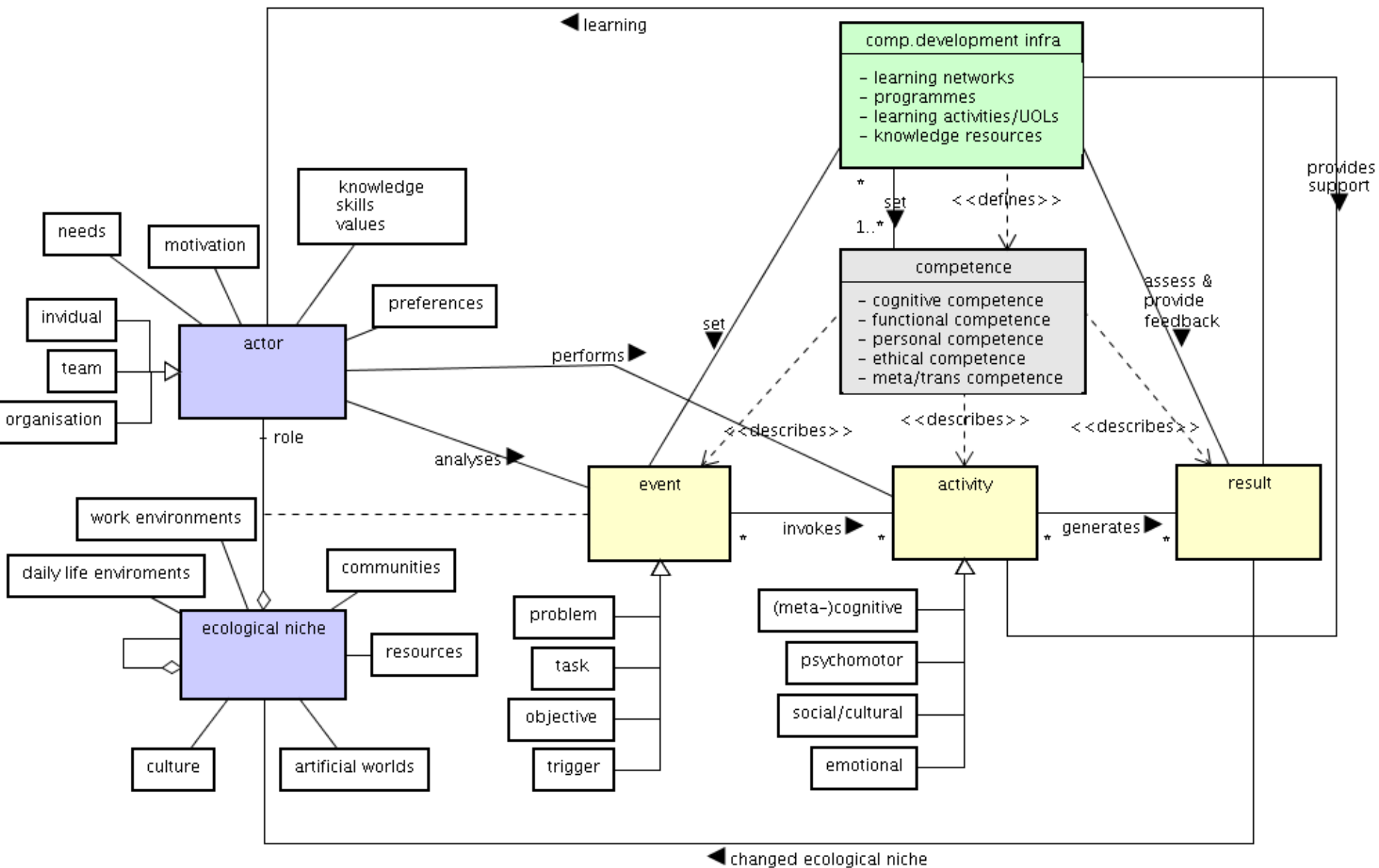
This estimation can be based on:

- self assessment
- informal assessments by others
- formal assessments by others



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Position in a learning network

- Research to the use of language technologies (LSA)
 - All the materials in a domain => result is vector representation
 - Production of a learner (e.g. a report) => also vector representation
 - Compare and position learner in the domain
 - Also used for essay assessment



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Individualised Learning Paths

- Open standards for Learning Paths
- Simulation model of recommendor system
- Collaborative filtering
- Ontologies & Collaborative filtering



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How to provide support

- Various aspects (stimulate social interaction, finding peers to help you, gaming, social exchange theory).
- Also experiments with LSA to find a peer who can answer your question in the network



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How to create and share learning activities

- IMS Learning Design
- Design tools
- Authoring tools to edit sets of learning activities
- Repositories for learning designs (exchange)
- Runtime environments for learning design based courses



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How to integrate this all?

- **Personal Competence Management System**
- **NOT** personal in the sense of 'alone, individual'
- **Owned** by a person (compare: Personal Computer), not by an organisation (company, school, university, etc.) to manage your personal competences during lifetime in many different institutions and informal learning events.
- Can be used **in conjunction** with organisational systems (eg the LMS of a university, HRM system of a company, knowledge management systems).
- The PCM can be downloaded and used by anyone to develop their competences. When used they can share and connect to all others using the infrastructure developed in the TENCompetence project



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What it does...

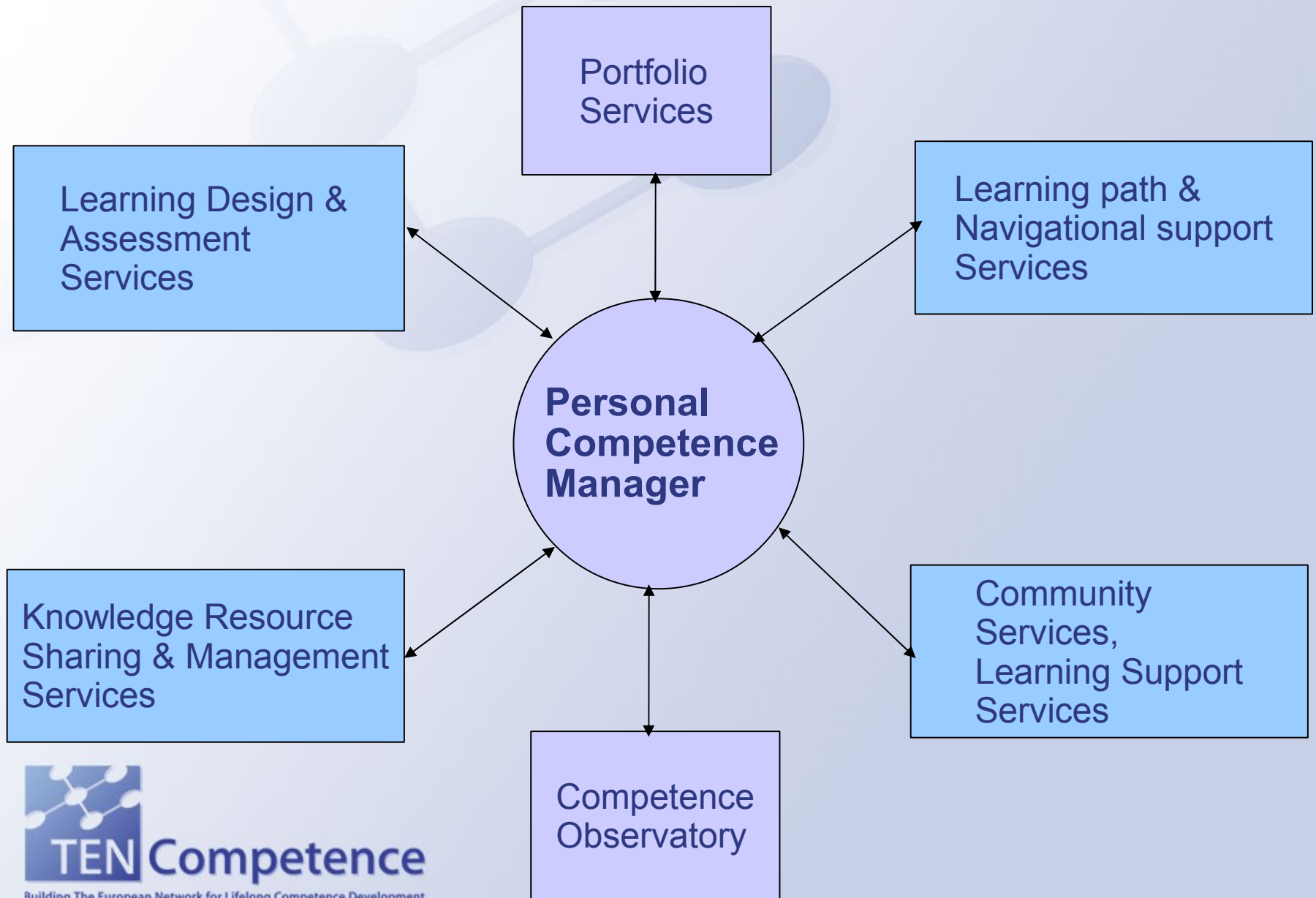
- You can create, share, select and manage various **competence profiles** to support the formulation of your learning goals
- You can **assess your personal competences**, compare it with others and reflect on it
- You can create, share, select and manage **personal action plans** to attain the learning goals
- You can create, share and select learning activities, courses, study programmes, learning services and knowledge resources in your action plan
- These actions can come from **different sources**
- You can ask for **advice** in any situation (from peers, agents, etc.)



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High level overview of connected services



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Selected Competence Profile

☐ Playing Pop Songs on the G

- ☐ Basic Guitar Skills
- ☐ Basic Chords
- ☐ Chord schemas for blues & pc

Playing Pop Songs on the Guit

Guess the Chords Test

Plan for Basic Guitar Skills

[Mark competence as attained](#)

Description

I have used these actions to learn basic guitar skills. I started with the interactive lessons. Maybe you can also start with the small self test I have made in basic guitar skills to see where you are.

Options

- [Create new plan](#)
- [Select plan](#)
- [Edit description](#)
- [Break synchronization](#)
- [View rights](#)

Route

[Show me what to do next](#)

```
graph TD; A[Beginners course to guitar playing] --> B[Interactive lessons: scales]; A --> C[Rythm]; A --> D[Basic Guitar Skills]; B --> E[Basic Chords]; C --> E; D --> E;
```

continue when minimal 1 is completed

Agent

What to do now?

[Create an action](#)

New competence "basic ..." added

[User "Colin" requests access to "Guitars" community](#)

Rating Support General forum

Community ★★★★★ [Add your own comment](#)

Rating	Name	Comment
★★★★★	Scott	I don't think this action plan was very u...
★★★★☆	Phil	I don't agree with Scott. Although prob...
★★★★★	Gizmo	For me it was very usefull. I am new an...
★★★★☆	Ruud	I do not like to play the guitar anymore ...

People

[Friends](#)

Name	Available
Peter	
Alex	
Condol...	
Ayman	

Planning

- In the second year of the process....
- When you are interested to **participate** in development or in pilots, please contact me (rob.koper@ou.nl) or the website tencompetence.org
- Remember: everything will be **freely** available for everyone to use (and to improve)!
- The **first release** is planned before summer this year (Meeting in Barcelona, June 2007)
- The **final release** is planned for December 2009, also the experiments and pilots in the other sectors will be finalized by then.



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Some consequences

- In future we will stimulate our students (and others!) to use the personal competence development tools:
 - Make persons in society aware of their own responsibility of planning their career/competences independent of an institute: mixing various formal and informal learning activities
 - Learn them how to use these tools (and methods) effectively
 - Deliver services for personal competence management (curricula will be available through these tools, using various competence profiles)
 - Provide connections to our infrastructure (student data, course data, etc.)



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Thanks!

References:

- dspace.ou.nl
- www.tencompetence.org



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